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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,219	07/06/2000	Scott A. Chalmers	02578.0006.00US00	4816
22930	7590	11/23/2004	EXAMINER	
HOWREY SIMON ARNOLD & WHITE LLP ATTEN: MARGARET P. DROSOS, DIRECTOR OF IP ADMIN 2941 FAIRVIEW PARK DR, BOX 7 FALLS CHURCH, VA 22042			PHAM, HOA Q	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/611,219

Applicant(s)

CHALMERS ET AL.

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-85 is/are pending in the application.
- 4a) Of the above claim(s) 48-69 and 78-85 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 70-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/2/04 has been entered.

2. With respect to the amendment filed on 9/2/04, claims 48-85 are pending in this application. Claims 48-69 and 78-85 are withdrawn from consideration. Claims 70-77 are examined as below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 70-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraoka et al (JP-411220004A) in view of Cabib et al (5,856,871) and Finland reference (*ImSpector* imaging Spectrograph brochure including specifications, **Spectral Imaging Ltd.**) (of record) and Busta et al (4,198,261).

Regarding claims 70, 72, 74, and 76; Muraoka et al discloses a plurality of stations (10, 20, 30, 40, 50) involved in performing on or more aspects of the CVD process; a wafer transfer mechanism (60) disposed within the system (1) to transfer the wafer (9) between stations, a film thickness measuring section (70) for measuring the thickness of the wafer while the thickness measuring section and the wafer undergo relative motion provided by the wafer transfer mechanism (see abstract and figures 1, 3, 4, and 5). Muraoka et al does not explicitly teach that the thickness measuring section is an imaging spectrometer for deriving a plurality of one-spatial-dimension spectral images. However, such a feature is known in the art as taught by Cabib et al and Finland reference. Cabib et al teaches that an imaging spectrometer or spectral imager using for resource mapping of the earth surface from airplanes and satellites could be used for film thickness mapping (column 2 lines 8-23). Furthermore, Finland reference teaches that imaging spectrometer is a one-spatial-dimension imaging spectrometer (figure in page 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the thickness measuring section of Muraoka et al by an imaging spectrometer or spectral imager taught by Cabib et al and Finland reference because Cabib teaches that the spectral imager can be used for resource mapping of the earth surface from airplanes and satellites could be used for the same purpose of film thickness mapping and Finland reference teaches the use of an imaging spectrometer. Muraoka et al also does not explicitly teaches that the optical detection unit (70) is located outside of the transferring chamber (60); however, such a feature is known in the art as taught by Busta et al. Busta et al, from the same field of endeavor,

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discloses a method for thickness and end point detection during plasma etching (see abstract and column 3, lines 52-60 and column 4, lines 6-12) in which the optical inspection unit (10) is located outside of the etching chamber (12) (figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the optical detection unit (70) outside of the chamber as taught by Busta et al. The rationale for this modification would have arisen from the fact that by placing the optical detection unit outside of the chamber would prevent the damages to the unit due to the heat and moisture inside the chamber and also increase the accuracy of the measurement.

Regarding claims 71, 73, 75, and 77; as mentioned above, Busta teaches both endpoint detection and thickness measurement; thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Muraoka et al a step of determining the endpoint of an etching layer as taught by Busta et al if additional measurement is desired.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 70-77 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 66-89 of copending Application No. 09/899,383 in view of Busta et al. Claims 66-89 of copending application discloses all the features of the present invention except that the optical detection unit is located outside of the transferring chamber; however, such a feature is known in the art as taught by Busta et al. Busta et al, from the same field of endeavor, discloses a method for thickness and end point detection during plasma etching (see abstract and column 3, lines 52-60 and column 4, lines 6-12) in which the optical inspection unit (10) is located outside of the etching chamber (12) (figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the optical detection unit outside of the chamber as taught by Busta et al. The rationale for this modification would have arisen from the fact that by placing the optical detection unit outside of the chamber would prevent the damages to the unit due to the heat and moisture inside the chamber and also increase the accuracy of the measurement.

This is a provisional obviousness-type double patenting rejection.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references relate to thickness measuring device: Ishizawa et al (6,162,010); Moriyama et al (5,609,511), Tien (4,713,140), Sternheim et

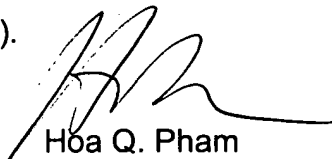
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al (4,454,001), Patten (3,645,623), Frisa et al (6,671,059), Finarov (RE38,153) and Dubbeldam (4,908,508).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP
November 17, 2004